CLAIMS

1. An optical pickup device comprising:

a first light source for emitting a light beam with arbitrary wavelength; a second light source for emitting a light beam with wavelength different from that of the first light source;

a synthesizing means for making an optical axis of the light beam emitted from the first light source coincide with an optical axis of the light beam emitted from the second light source;

a converging means for converging the light beam outputted from the synthesizing means onto an optical disk; and

a detecting means for receiving the light beam reflected on the optical disk, wherein

the synthesizing means is made close to the converging means, so as to drastically change imaging magnification as divergence degree of the light beam emitted from the first light source, which is outputted from the synthesizing means and imaging magnification as divergence degree of a light source of the light beam emitted from the second light source, which is outputted from the synthesizing means.

2. The optical pickup device as defined in Claim 1 including:

a converting means for converting the light beam outputted from the synthesizing means into parallel lights.

3. The optical pickup device as defined in Claim 2, wherein

when a back focus of the converting means for the wavelength of the first light source is f1 and a back focus of the converting means for the wavelength of the second light source is f2, the first light source is located at a position nearer to the converting means than f1 is, while the second light source is located at a position farther from the converting means than f2 is.

4. The optical pickup device as defined in any of Claims 1 to 3, wherein

a light path length converting means for lengthening light path length of a light is provided between the synthesizing means and the converging means.

5. The optical pickup device as defined in Claim 4, wherein

the light path length converting means is made of material having high refractive index.

6. The optical pickup device as defined in any of Claims 1 to 5, wherein

when imaging magnification that is accomplished by an

optical element between the first light source and the optical disk is made M1 and imaging magnification that is accomplished by an optical element between the second light source and the optical disk is made M2, $1.5 \leqq M2/M1$.

7. The optical pickup device as defined in any of Claims 1 to 6 further including:

an aperture diaphragm for moving with the converging means and converging a light beam spot of desired size onto the optical disks.

8. The optical pickup device as defined in any of Claims 1 to 7, wherein

when imaging magnification of the converging means with respect to the first light source is made m1, the following conditional expression is satisfied:

$| m1 | \leqq 0.068$.

9. The optical pickup device as defined in any of Claims 1 to 8, wherein

when numerical aperture on the side of the optical disk corresponding to the combination of the first light source and the optical disk is made NA1, and numerical aperture on the side of the optical disk corresponding to the combination of the second and the optical disk is made NA2, and

when the imaging magnification of the converging means with respect to the first light source is made m1, and imaging magnification of the converging means with respect to the second light source is made m2, the following conditional expressions are satisfied:

$NA1 < NA2$,

$| m2 | \leqq | m1 |$.

10. The optical pickup device as defined in any of Claims 1 to 9, wherein

when wavelength of the light beam emitted from the first light source is made $\lambda 1$, and wavelength of the light beam emitted from the second light source is made $\lambda 2$,

$760nm \leqq \lambda 1 \leqq 810nm$,

$620nm \leqq \lambda 2 \leqq 680nm$.

11. The optical pickup device as defined in any of Claims 1 to 10, wherein

the light beams as divergent lights emitted from the first and second light sources are incident on the synthesizing means, thereby scattering a reflected light on the surface of the synthesizing means.